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09/896,432	06/29/2001	Edward Paul Cernocky	SOC-105	8240

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EXAMINER

BLACKNER, HENRY A

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/896,432

Applicant(s)

CERNOCKY ET AL.

Examiner

Henry A. Blackner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 1-6 and 8-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. The PCT application identified on page 2 line 19 (PCT/US00/05774) is entitled "Casing Conveyed Perforating Process and Apparatus". The PCT Patent that is identified on the Information Disclosure Statement (WO 00/05774) is PCT application (PCT/US99/16760).

### ***Drawings***

The drawings are objected to because the following reference characters (24, 26, 28, and 30) in figure 3 are not directed to any features within the illustration.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figure 6 does not identify the reference character "54" for the term "aperture", as stated in the disclosure on page 10 line 20.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities:

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1. The term “*explosive charge*”, page 8 lines 5, 11, and 14 and page 11 line 1, was previously identified as “*explosive charge and their associated detonators*”.
2. The term “*shaped explosive charge*”, page 8 line 9, was previously identified as “*explosive charge and their associated detonators*”.
3. The term “*receiver*”, page 10 line 11, was previously identified as “*wireless receiver*”.

Appropriate correction is required.

### ***Claim Objections***

Claims 1 and 8 are objected to because of the following informalities: The term “*receiver*” was previously identified as “*wireless receiver*”.

Claims 2-4 and 9-11 are objected to because of the following informalities: The term “*coded signal*” was previously identified as “*coded wireless signal*”.

Claims 5 and 12 are objected to because of the following informalities: The term “*wireless signal*” was previously identified as “*coded wireless signal*”.

Claims 6 and 13 are objected to because of the following informalities: The term “*circuit*” (claim 6 lines 3, 4, and 5) and (claim 13 lines 3, 4, and 5) was previously identified as “*electrical circuit*” and the term “*board*” (claim 6 line 3) and (claim 13 line 3) was previously identified as “*circuit board*”.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 is identified as dependent of claim 1, but claim 14 is acknowledged as a method for detonating an explosive charge and claim 1 is acknowledged as an apparatus for detonating an explosive charge. For examining purposes, claim 14 will be examined as a dependent claim according to claim 8.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-12, and 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 4,884,506 to Guerreri.

In regards to claims 1 (pertaining to a device) and 8 (pertaining to a method), Guerreri clearly illustrates a detonation device (10) for detonating an explosive charge comprising of a command unit (11), a translator unit (12), a control unit (13), which is comprised of a wireless receiver (61), a microprocessor and control means (62), a firing mechanism (63), which is comprised of an electric blasting cap (104) with an explosive bridge wire and an energy storage and triggering means (110), in figures 1-3 and 5 and column 3 lines 1-8, lines 11-26, and lines 30-51, column 4 lines 3-10 and lines 15-29, column 6 lines 57-68, and column 7 lines 1-14 and line 26.

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In regards to claims 2-4 (pertaining to a device) and 9-11 (pertaining to a method), Guerreri clearly illustrates a coded wireless signal that allows selective detonation of a plurality of explosive charges individually, in sequence, and in any desired pattern in figures 2, 3, 4, and 4a and column 3 lines 45-51, column 4 lines 30-66, column 5 lines 1-41 and lines 50-64, column 6 lines 5-9, lines 12-24, and lines 40-56.

In regards to claims 5 (pertaining to a device) and 12 (pertaining to a method), Guerreri clearly illustrates that the coded wireless signal does not transmit the power that is required to detonate the explosive charges, as identified in the rejections of corresponding parts of claims 2-4 and claims 9-11, above.

In regards to claims 7 (pertaining to a device) and 14 (pertaining to a method), Guerreri clearly illustrates that said microprocessor includes a digital signal processing logic, as identified in the rejections of corresponding parts of claims 2-4 and claims 9-11, above.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 6 (pertaining to a device) and 13 (pertaining to a method) are rejected under 35 U.S.C. 103(a) as being unpatentable over Guerreri in view of Neyer. Guerreri discloses the claimed invention in figure 5 and column 6 lines 64-68 and column 7 lines 1-14, that the means for explosive charge (14) is comprised of a shape charge with a solid explosive (101), which is initiated by an electric blasting cap (104). The electric blasting cap, which comprises an explosive bridge wire, is initiated with the application of an electric current, which is applied via a capacitor discharge-blasting machine (110) and initiating switch (105), to the explosive bridge wire. Guerreri does not illustrate that the explosive bridge wire is composed of an electrical circuit that is formed on a circuit board with an aperture and a portion of the electrical circuit overlying the aperture.

Neyer teaches in figures 2 and 3 and column 2 lines 38-46 and lines 65-69 and column 3 lines 1-3, lines 11-18, and lines 23-37, that a chip slapper (40) that is composed of a ceramic substrate (20) and contains a coating of a metal film, which is etched into the shape of spaced conductive lands (14) and (16) and bridge member (42), and is deposited with a flyer layer (20) of dielectric coating. The bridge member is a curved shape, typically a circle, and includes a cavity (44). When a current is applied to the chip slapper, via the conductive lands, the bridge member is vaporized and produces a circular shaped flying plate (48). The circular shaped flying plate is produced by the cavity, which results in a shock wave focused to a higher pressure, due to the flying plate's ability of sticking to the substrate. The flying plate's ability to sticking to the substrate is due to the decrease in plasma driving the inner surface of the bridge member. It

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would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Neyer's improved shaped bridge slapper in order to achieve a larger shock wave to detonate an explosive, by using less energy than is required for a conventional bridge slapper.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents show the state of the art in the field of remote detonation of explosive charges.

U.S. Patent No. 6,247,408 B1 to Andrejkovies et al.

U.S. Patent No. 5,767,437 to Rogers

U.S. Patent No. 5,159,149 to Marsden

U.S. Patent No. 5,090,321 to Abouav

U.S. Patent No. 5,038,682 to Marsden

U.S. Patent No. 4,615,268 to Nakano et al.

U.S. Patent No. 4,576,093 to Snyder

Foreign Patent No. JP 405149700 A to Funada

Foreign Patent No. FR 2688583 A1 to Thierry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry A. Blackner whose telephone number is 703-305-4799. The examiner can normally be reached on 08:15 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone can be reached on 703-306-4198. The fax phone numbers for the



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organization where this application or proceeding is assigned are 703-306-4196 for regular communications and 703-305-3597 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5771.

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August 20, 2002



MICHAEL J. [unclear]  
SUPERVISORY PATENT [unclear]